based on the bar code reading. By using adapter **10**, PDA **12** can be used for inventory control or in other situations where bar codes can be used.

Adapter **10** can also interact with PDA **12** to facilitate operation of a remote-controllable device such as a television, VCR, or stereo. As depicted in FIG. **4**, a remote-controllable device **80** is depicted as comprising a photo detector **82** which is electrically coupled with a processor **84** and device electronics. By loading appropriate software in PDA **12**, light source **44** can be operated by microprocessor **38** to emit low speed pulses to remote-controllable device **80** for remotely controlling the device.

In one embodiment it is envisioned that software code corresponding to a plurality of different remote-controllable device **80** is loaded in memory **13** of PDA **12**. Display screen **19** can be used to access a list of available remote-controllable device. By choosing a select remote-controllable device from the list, processor **11** can operate the corresponding software to assign control buttons to perform specific functions relative to operation of the select remote-controllable device. Alternatively, a list of functional operations can be listed on display screen **19**. By selecting a desired function, processor **11** or **38** operates light source **44** to emit a desired light pulse that when received by the select remote-controllable device signals the device to perform the desired function. For example, by accessing software on the PDA for a television, depressing a select control button **42** on either PDA **12** or adapter **10** generates a low speed pulse that turns the television on or off. Of course other functions such as volume or channels can also be selectively changed. Performing functions such as downloading data stored in memory **13** of PDA **12** can be executed using similar steps.

It is noted that the operation of adapter **10** for downloading information to computer **70** is different than operation of adapter **10** for remote control of a device. This is because the bit rates are substantially different for the different uses. From a practical standpoint, downloading information from PDA **12** to computer **70** requires a bit rate of about 20 kbps or higher. In contrast, operation of a remote-controllable device requires a bit rate of about 10 bps.

As depicted in FIG. **5**, the present invention also envisions that the electronic circuitry of adapter **10**, as depicted and discussed with regard to FIGS. **1–5**, can be integrally incorporated into a single PDA **60**. For example, PDA **60** is depicted having a top end **62**. Formed at top end **62** is a window **64** through which a light beam from a light source within PDA **60** can emanate. Adjacently positioned to window **64** is photo detector **56**. Of course, circuitry which is already found in a conventional PDA, such as a micro processor and a power system, need not be redundantly transferred from adapter **10** into PDA **60**.

The present invention may be embodied in other specific forms without departing from its spirit or essential characteristics. The described embodiments are to be considered in all respects only as illustrative and not restrictive. The scope of the invention is, therefore, indicated by the appended claims rather than by the foregoing description. All changes which come within the meaning and range of equivalency of the claims are to be embraced within their scope.

What is claimed and desired to be secured by united states letters patent is:

1. An adapter removably attached to a PDA for operating a remote-controllable device, the adapter comprising:

(a) an interface connector configured to removably electrically couple with the PDA,

(b) a micro controller electrically coupled with the interface connector;

(c) a light source configured to emit a light beam; and

(d) means for converting the light beam from the light source into a digital signal, the digital signal being selectively transmitted to operate the remote-controllable device, wherein the means for converting the light beam comprises an LCD positioned in the path of the light beam, the LCD being operable between an on position which blocks the light beam and an off position which allows the light to pass therethrough.

2. An adapter as recited in claim **4**, wherein light source is a light emitting diode (LED).

3. An adapter as recited in claim **4**, wherein the means for converting the light beam comprises switching circuitry for turning the light source on and off.

4. An adapter as recited in claim **4**, wherein the digital signal corresponds to data stored within the PDA.

* * * * *